

## STN Karlsruhe

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 ACCESSION NUMBER: 1999-047559 [05] WPIDS  
 DOC. NO. CPI: C1999-015046  
 TITLE: Microbial strain over-expressing antibiotic efflux gene -  
 for producing L-cysteine, L-cystine, N-acetyl-serine  
 and/or thiazolidine derivatives.  
 DERWENT CLASS: B03 B05 D16 E13 E16  
 INVENTOR(S): LEINFELDER, W; WINTERHALTER, C  
 PATENT ASSIGNEE(S): (CONE) CONSORTIUM ELEKTROCHEM IND GMBH  
 COUNTRY COUNT: 33  
 PATENT INFORMATION:

PATENT NO	KIND	DATE	WEEK	LA	PG	MAIN IPC
EP 885962	A1	19981223	(199905)*	GE	33	C12N015-31 <--
R: AL AT BE CH CY DE DK ES FI FR GB GR IE IT LI LT LU LV MC MK NL PT						
DE 19726083	A1	19981224	(199906)			C12N001-00
JP 11056381	A	19990302	(199919)		23	C12N015-09
CN 1203274	A	19981230	(199920)			C12N001-21
CA 2235419	A	19981219	(199922)			C12N015-31
HU 9801369	A2	19990528	(199930)			C12P013-00
US 5972663	A	19991026	(199952)			C12P013-12
JP 2992010	B2	19991220	(200005)		23	C12N015-09
KR 99007062	A	19990125	(200014)			C12N015-31
BR 9803346	A	20000208	(200023)			C07K004-04
MX 9804927	A1	19990701	(200061)			C12P013-06

## APPLICATION DETAILS:

PATENT NO	KIND	APPLICATION	DATE
EP 885962	A1	EP 1998-109269	19980522
DE 19726083	A1	DE 1997-19726083	19970619
JP 11056381	A	JP 1998-173278	19980619
CN 1203274	A	CN 1998-102617	19980618
CA 2235419	A	CA 1998-2235419	19980616
HU 9801369	A2	HU 1998-1369	19980618
US 5972663	A	US 1998-97759	19980616
JP 2992010	B2	JP 1998-173278	19980619
KR 99007062	A	KR 1998-22734	19980617
BR 9803346	A	BR 1998-3346	19980617
MX 9804927	A1	MX 1998-4927	19980618

## FILING DETAILS:

PATENT NO	KIND	PATENT NO
JP 2992010	B2 Previous Publ.	JP 11056381

PRIORITY APPLN. INFO: DE 1997-19726083 19970619

INT. PATENT CLASSIF.:

MAIN: C07K004-04; C12N001-00; C12N001-21; C12N015-09;  
 C12N015-31; C12P013-00; C12P013-06; C12P013-12

SECONDARY: C07H021-04; C07K014-00; C07K014-195; C07K014-245;  
 C12N001-20; C12N015-63; C12N015-67; C12N015-70;  
 C12P017-14

INDEX: C12N001-21, C12R001:19; C12P013-12, C12R001:19;  
 C12N001-21, C12R001:19; C12P013-12, C12R001:19

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BASIC ABSTRACT:

EP 885962 A UPAB: 19990310

A new microbial strain is claimed which is suitable for the fermentative production of L-cysteine, L-cystine, N-acetyl-serine and/or thiazolidine derivatives and over-expresses at least one gene coding for a protein that mediates cellular clearance of antibiotics or other substances that are toxic for the microorganism.

Also claimed are:

(1) a gene coding for a protein comprising the sequence MSR  
KDGVLLALLVV VVWGLNFVVI KVGLHNMPRL MLAGLRFMLV (SEQ. ID. NO: 1);  
(2) a gene coding for a protein comprising the sequence: MKFRGGRMSR  
KDGVLLALLVV VVWGLNFVVI KVGLHNMPRL MLAGLRFMLV AFPAIFFVAR PKVPNLLLLG  
YGLTISFAQF AFLFCAINFG MPAGLASLVL QAQAFFTIML GAFTFGERLH GKQLAGIALA  
IFGVVLIED SLNGQHVAML GFMLTLAAAF SWACGNIFNK KIMSHSTRPA VMSLVIWSAL  
IPIIPFFVAS LIIDGSATMI HSLVTIDMTT ILSLMYLAFL ATIVGYGIWG TLLGRYETWR  
VAPLSLLVPV VGLASAALLL DERLTGLQFL GAVLIMTGLY INVFGLRWRK AVKVGS (SEQ. ID.  
NO: 2);

(3) proteins comprising SEQ. ID. NO: 1;

(4) a plasmid containing at least one gene as in (1) or (2).

USE - The production of L-cysteine, L-cystine, N-acetyl-serine and/or thiazolidine derivatives, comprising using the above microbial strain is claimed and a process for producing L-cysteine, in which intracellularly produced L-cysteine reacts with an intracellular ketone or aldehyde in a microorganisms to form a thiazolidine derivative, the thiazolidine derivative is secreted from the microorganism by means of a protein that mediates cellular clearance of antibiotics or other substances that are toxic for the microorganism, and optionally after separating the thiazolidine derivative, L-cysteine is recovered by equilibrium displacement of the reaction equilibrium between L-cysteine and the thiazolidine derivative in the direction of L-cysteine.

Dwg.0/5

FILE SEGMENT: CPI

FIELD AVAILABILITY: AB; DCN

MANUAL CODES: CPI: B04-E01; B04-E08; B04-F10A; B04-N03A; B07-F01;  
B10-B02D; B10-C04D; D05-C; D05-C01; D05-H04;  
D05-H12A; D05-H12E; E07-F01; E10-B02D1; E10-C04D5